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GEOGRAPHIC SCHOOL BULLETINS

Published Weekly by

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NOTE TO TEACHERS: Because of the Easter recess, there will be no GEOGRAPHIC SCHOOL BULLETINS on April 10. The BULLETINS will be resumed on Monday, April 17.

Harrison Howell Walker

THE AUSTRALIAN MERINO'S OVERCOAT WILL KEEP AMERICAN SOLDIERS WARM

On the well-padded shoulders of the merino sheep lies the responsibility for Australia's front rank among the world's wool producers. With about a sixth of the world's sheep, the continent clips about one-fourth of the world's wool, thanks to the extra-thick coats of prize merinos. About half of the merino flocks in the world graze on Australia's pastures. Ancestors of this curly-horned merino ram, whose wool is five inches thick, were introduced from Spain in 1797. They have put the nation on a wool standard, as prosperity rises and falls in proportion to wool exports. Nearly half of Australia's 120,000,000 sheep are in New South Wales. To forestall a wool shortage, the United States has contracted to buy all Australia's wool exports for the duration of the war (Bulletin No. 2).

GEOGRAPHIC SCHOOL BULLETIN

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic School Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents (stamps or money order); in Canada, 50 cents. Originally entered as second-class matter January 27, 1922; re-entered as of April 27, 1943, Post Office, Washington, D. C., under Act of March 3, 1879. Copyright, 1944, by National Geographic Society, Washington, D. C. International copyright secured. All rights reserved. Quedan reservados todos los derechos.

Eire, Land of Many Contradictions

GEOGRAPHY as well as policy is shaping the role of Eire in the war. Its position has made the land a natural observation post on sea lanes from the Americas to Great Britain and to Europe's invasion coasts. Policy has placed the nation in the part of a neutral.

Eire occupies the southern five-sixths of Ireland, the nearest of the British Isles to the United States. It consists of the 23 counties of Munster, Leinster, and Connaught Provinces and three counties of Ulster. Its population in 1941 was about 3,000,000.

The rest of Ireland—the six Ulster counties in the island's northeast corner—comprises Northern Ireland, politically a member of the United Kingdom. Its 1941 population was about 1,280,000. Along with all the rest of the British Empire except Eire, Northern Ireland is at war, and is the camping ground for many an American soldier.

Independent Eire Makes Policy on Its Own

Eire is an independent Dominion in the British Commonwealth of Nations. After many uprisings, its war for independence was concluded in 1921 by a treaty granting Dominion status to the Irish Free State (*Saorstát Eireann*). In 1937 the old name of Eire was revived. In the 1937 constitution Eire affirmed its right to manage its affairs with other nations.

Eire embraces most of the saucer-shaped island's central plain. Short ranges of low mountains rim the coast, with few summits above 3,000 feet. On the west the Atlantic pounds Eire's shores, wears away the land, carves out deep fjords, and surges through a fringe of small islands as Irish as their names—Aran, Achill, Clare, and Rathlin.

The fertile soil draws on eroded limestone and vegetable mold for its richness. About two-thirds of the land is good for crops and pastures. The rest is bog, highland, and moor. Bogs supply peat for Irish hearths, in their dark depths nourish romantic folklore.

Water rules the weather. Warm winds scoop moisture from the Atlantic and blow mistily against the western hills (illustration, next page), wetting the coastal strip with heavy rains. This keeps the temperature 20 to 30 degrees higher than American and European areas in the same latitude, assuring a mild damp climate.

An Island-Size Garden

The rivers are freighted more with history and literature than with commerce. Short in mileage but long in sentiment are the Liffey, flowing into the Irish Sea at Dublin; the Lee, entering Cork harbor; and the Boyne. Biggest river in the British Isles is the Shannon, 250 miles long.

Most famed of the lakes are the Lakes of Killarney, bright isle-studded mirrors set in the emerald hills of County Kerry. Some landlocked estuaries or fjords could pass for lakes. Notable examples are Loughs Swilly, Foyle, and Carlingford.

Eire is chiefly agricultural, most of the island's industries being located in Northern Ireland. In 1941 oats stood first among Eire's grains, with wheat, barley, and rye next in line. Potatoes, the staple food—Peruvian long before they were Irish—topped all yields with a total of more than 3,600,000 tons. Hay, the crop to which the largest acreage goes, yielded 4,000,000 tons. Flax, Irish to its roots,

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W. Robert Moore

WALLABIES HEIGHTEN AUSTRALIA'S FAME AS THE KANGAROO LAND SUPREME

Between 50 and 60 members of the kangaroo family are known in Australia, which, except for the Western Hemisphere opossum, has a near monopoly on marsupials (animals with front-porch pouch for carrying their young). Ranking in height between the man-size and the mouse-size kangaroos, the wallabies are the most numerous. There are more than thirty varieties. Unlike jolly kangaroos, which troop about in packs of five to fifty, rock wallabies are seldom seen except alone or in pairs. Living in caves and crevices, the rock wallabies go shyly out to forage at night, dodging their predatory neighbor, the fox. Special rough surfaces on their toes enable them to keep their footing on rocks. White patches beneath the eyes and on the breast and the long brushy tail identify these as brush-tailed rock wallabies. Sightseeing visitors at the Jenolan Caves near Sydney have almost tamed them with frequent bribes of food. Wallabies and other marsupials are only the beginning of the animal wonders which the Yanks may encounter in Australia (Bulletin No. 2).

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Where Are the Yanks? 7. Australia

(This is the seventh in a series of articles about the regions where American service men and women are stationed.)

WHEN the Japanese troops landed on the island of New Britain in January, 1942, they were the first enemy to set foot on territory governed by Australia. Their action set the world to asking questions about the lonely Australian continent in the South Pacific.

How could the young nation of Australia, with a population less than that of New York City, defend an area almost as large as that of the United States? How could it send its sons halfway around the globe to fight for England's freedom as well as its own?

Yanks who streamed into Australia to help hold the United Nations front are getting the answers at firsthand. They are seeing a land fringed with mountains, pocked with "dry pan" lakes, seamed in the east with rivers, patched in the center with rolling plains and pastures, marred in the west with bleak deserts, clad with jungle in the tropical north.

Nature grudges water in Australia, making farming difficult; gives man few odds except space and sunshine; in the north besets him with tropic heat and 100-mile-an-hour winds from the Timor Sea.

Cities Hold More than Half the People

Land clearing calls for a Spartan spirit. Bugs, mosquitoes, spiders, snakes, and leeches infest the jungle. Thorny vines and poisonous plants take their toll in stingings and itchings. The flies of desert towns are fabulous for their stick-to-itiveness.

Australians, about 97 per cent of British ancestry, are hardy and resourceful. When the glitter of easy gold dulled in the 1870's, miners took to the land as farmers and ranchers in the bush country they called "the outback."

Aborigines, black and backward, are 48,000 strong in the so-called "never-never land" of the north. "Abo" women are called *lubras* or Marys. The men may serve as trackers and guides, or do some manual work. These people still make fire with sticks, hunt game with spears and boomerangs.

More than half the people of Australia live in cities, the biggest of which are Sydney and Melbourne, with more than a million residents each. Next are Adelaide, Brisbane, and Perth. Canberra, the capital, is set in a sort of District of Columbia official zone called the Federal Capital Territory between Sydney and Melbourne.

Foremost for Wheat and Wool

The saying goes that Australians ride to fortune on the backs of their sheep. Wool is the country's most valuable export comprising one quarter of the world's output. Australia can count 17 sheep (illustration, cover) and two cattle per person. The ratio of horses is one to four persons. Many Aussies grow up in the saddle, make superb cowboys or cavalrymen.

Wheat, the No. 1 crop, puts Australia among the world's three leading wheat exporters. Sugar cane plantations in the tropical northeast of Queensland are tended wholly by white labor. Tonnages of fruits run high in the south. More than 300 species of eucalyptus trees are native to the continent.

Australia is a land of contrasts in creatures and customs. The little koala is a teddy bear come to life—neat, clean, and cute. It never drinks, getting its moisture from eucalyptus leaves. Yanks may argue that such a creature as the platypus could not exist, but there it is—a fur-coated, four-footed, duckbilled paradox that lays eggs but suckles its young. Other freakish inmates of this continental zoo include laughing birds, bearded lizards, and a legion of pouched animals headed by the kangaroo, of whose family the wallaby (illustration, inside cover) is a member.

American stand-bys have strange names in Australia. Coffee with cream is "white coffee." A hamburger masquerading as a meat ball is wrapped in cabbage leaves and is known as a "dim sim." Horses run the "wrong" way on the race track, automobiles are driven on the left side of streets. "Crackers!" corresponds to the Americanism "nuts!"

Australians like solid food—they go for meat and potatoes. They are fond of tea. Beef, mutton, and lamb are plentiful, while pork is scarce.

Australians are sports-minded. They flock to the beaches for swimming and sailing, play tennis expertly, make big events of their football games, stage rodeos with homebred bronco-busters and bulldoggers. They throng race tracks, take chances in government lotteries.

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contributes to the linen industry.

Eire farms with an eye on foreign markets, readily finds customers for bacon, hams, butter, poultry, eggs, and vegetables. Cattle, horses, sheep, and pigs figure sizably in exports. Great Britain has been by far the best customer and the biggest supplier.

From abroad Eire needs to buy corn, wheat, coal, tea, steel manufactures, machinery, shoes, sugar, oil, and gasoline.

Capital and largest city of Eire is Dublin (now known also by the Gaelic name of Baile Atha Cliath), which reported 482,000 residents in 1939. Well below 100,000 in the population scale stood the ports of Cork, Limerick, and Waterford in the order listed.

Note: Eire may be located on the National Geographic Society's Map of the British Isles. A price list of maps may be obtained from the Society's headquarters in Washington, D. C.

For further information, see "Old Ireland, Mother of New Eire," in the *National Geographic Magazine* for May, 1940*; and "Ireland: The Rock Whence I Was Hewn," March, 1927. (*Issues marked with an asterisk are included in a special list of Magazines which are available to teachers at 10¢ each in groups of ten.*)

See also in the GEOGRAPHIC SCHOOL BULLETINS: "Irish Bases for Britain an Old Question," December 9, 1940; "Eire Still Center for Culture of Druids and King Arthur," October 9, 1939; and "Rift in Ireland Widens as Northerners Draw the Line," February 28, 1938.

Bulletin No. 1, April 3, 1944.

Harrison Howell Walker

THE WIND WILL RAISE THE ROOF IF EIRE DOESN'T ROPE IT DOWN

Like most of Eire's people, the folk of Mullet Peninsula are country dwellers, living in sturdy whitewashed cottages with thatched roofs. But on the Mullet Peninsula, reaching into the Atlantic from Eire's windy northwest, even more than elsewhere do the sea winds whistle over mountain, moor, and fen with the mournfulness of all the banshees. To keep the winds from "scalping" his cottage, the forehanded Mullet man lashes down the roof thatch with a network of ropes attached to pegs in the cottage walls. The rope, like the thatch, is made of grass —a wiry grass called bent—which is twisted into stout cordage and rolled into balls like knitting yarn. To reel out the roof ropes, the cottager lets a ball unwind itself as he throws it over the roof ridge to his assistant on the other side.

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Radar Just One Offspring of Up-and-Coming Electronics Family

RADAR, the mystery device, uses its extremely short radio waves to detect unseen planes and ships, mountains, icebergs, and shore lines many miles away. How? With electrons.

Thus Radar merely emphasizes the astounding developments of the past 50 years in the field newly named "electronics." Foundation of these scientific advances is the smallest particle man has measured or imagined, the infinitesimal electron, that sub-microscopic fraction chipped off an atom. Scientists tell us that an electron is nothing more than a wisp of electricity, one of the negative electric charges of an atom. But in this half-century the tiny electron—even for a while before its existence was known—played the major part in creating, one after the other, wireless telegraphy, wireless telephony, X-ray photography, radio broadcasting, talking movies, and television. The latest offspring of the electronics family range from Radar and electron microscopes to automatic door-openers and crowd counters.

Wireless Telegraphy, Radio's Ancestor, Born in 1886

Just 58 years ago Heinrich Hertz discovered those invisible waves of electromagnetic disturbance which were christened hertzian waves. He found that he could transmit the waves through space and detect them at the staggering distance of 12 feet! That was the birth of wireless telegraphy, foreshadowing radio.

Marconi took charge of the infant art and developed it. By 1895 he had sent and received wireless signals—or radio signals—in Morse code between stations a mile apart; by 1899 he had signaled across the English Channel; and in 1901 he bridged an ocean, the North Atlantic. A year later he had made it possible for ships at sea to communicate with land and with other ships.

Electronics (not yet named) was working in rather primitive ways in the early days of wireless. Streams of electrons rushed along wires—which is to say that electric currents flowed—then were made to jump spark-gaps. They blasted the ether into waves during the jump. Those spark-gap waves were rough and broad, blanketing large segments of what would one day be the range of home radio dials. The early receivers were "coherers," glass tubes containing pinches of brass or nickel filings which flew together or cohered when an electromagnetic wave was received; they had to be jolted apart by automatic hammer blows before the next signal could be recorded.

Radio Tube Brought Age of Electronics

When De Forest invented the workable three-element electron tube in 1907, he started the real development of electronics. His tube was a forerunner of the varied tubes in today's radio set. After 1920 when broadcasting started, electronic development gained momentum and is now rushing ahead even more rapidly as a result of research for war.

Out of the little electron tube and its big brothers have poured new arts and industries like riches from a horn of plenty. It can be a delicate instrument catching the faintest signals from great distances, or measuring metal parts to millionths of an inch; it can be a giant of strength sending electrons surging along antennae to create powerful waves that travel to the ends of the earth.

These are electron tubes because the vital feature inside each one is a con-

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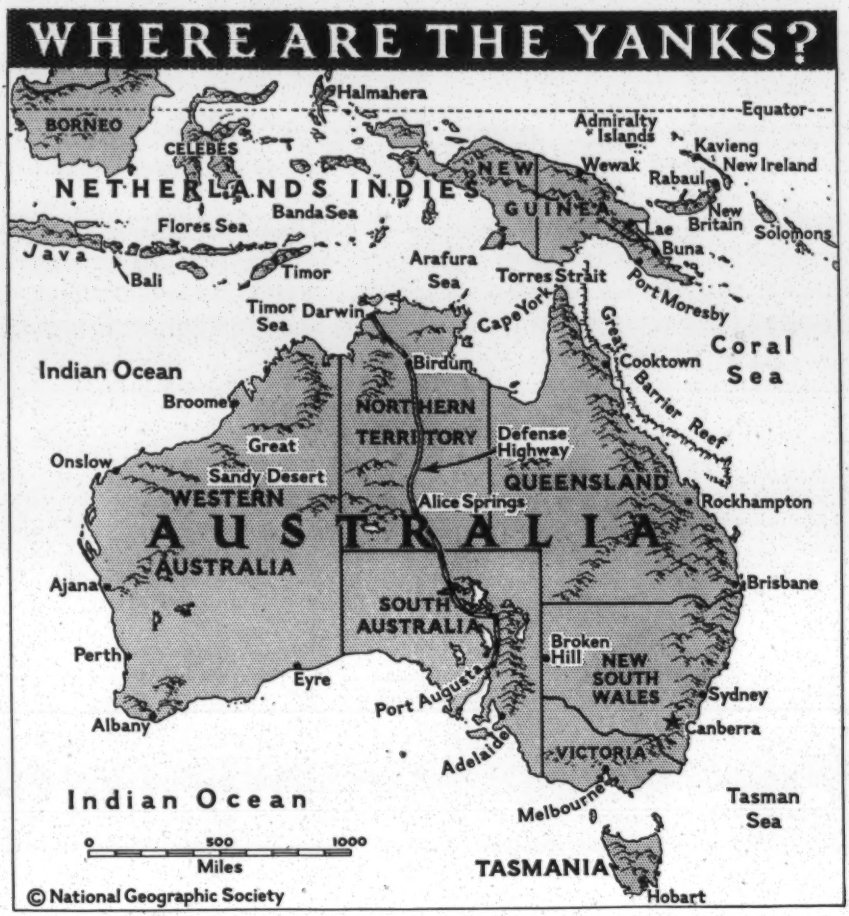
Radio programs attract many ears. Movies catch crowds eager to see Hollywood stars in action. Songs from Tin Pan Alley are sung along with British airs and home compositions.

A member of the British Commonwealth of Nations, the Commonwealth of Australia has Dominion status and is self-governing. The Governor-General is the only representative of the British Crown. Australia, far from being a colony, has colonies of its own.

Note: Australia is shown on the Society's Map of the Pacific Ocean and the Bay of Bengal.

For further information, see "American Bombers Attacking from Australia," in the *National Geographic Magazine* for January, 1943; "The Making of an Anzac," April, 1942; "Beyond Australia's Cities," December, 1936*; and "Capital Cities of Australia," December, 1935.

Bulletin No. 2, April 3, 1944.



EMPTY AUSTRALIA HAS FEW CITIES BUT MANY CITY-DWELLERS

In five cities on the coast live nearly half of the continent's population—Sydney, Melbourne, Brisbane, Adelaide, and Perth. About the size of the United States, Australia has its high mountains in the east instead of the west. Only a single north-south route crosses the continent; its northern and southern railroad sections, from Darwin and Port Augusta, are linked by a central stretch of highway between Birdum and Alice Springs. The Great Barrier Reef is the world's longest coral reef. Of the continent's five States, the two smallest are the most populous, Victoria and New South Wales. Tasmania is governed as a part of the Dominion of Australia.

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Revived Rail Link Joins Chile and Argentina

"*PASAJÉROS AL TREN*" ("All aboard") sounds again for the train between Chile and Argentina. After ten years of incomplete service, pieced out with a bus trip, the Transandean Railway is again scheduled for all-rail service linking the two southern South American neighbors on opposite sides of the Andes.

From Los Andes, on Chile's high plateau north of Santiago, the narrow-gauge railway winds up and eastward toward the crest of the Andes. It crosses the international border at Uspallata Pass through a tunnel bored under the ridge of La Cumbre ("The Crest" of the pass) on the southern flanks of Aconcagua, the Western Hemisphere's highest peak. This tunnel, over 10,000 feet above sea level, saves the railroad from climbing the additional 2,500 feet to the crest of the pass.

From the eastern or Argentine exit of the tunnel the railroad descends the slopes of the mountains through the Mendoza River valley. From Puente del Inca, 1,345 feet lower than the tunnel exit, expeditions have started out to climb 23,081-foot Mt. Aconcagua. This station is also the starting point for visiting the famous Christ of the Andes, the statue marking the frontier between Chile and Argentina. It was erected in Uspallata Pass by the Argentines and bears an inscription pledging peace between the two countries.

Chile Needs Trade Exits

At Mendoza, 65 miles east of the frontier, the narrow-gauge line ends and the broad-gauge Argentine Great Western Railway carries on to Buenos Aires.

The Transandean Railway climbs one of the world's two most formidable mountain obstacles. The Andes system, extending 4,400 miles from Panama to Tierra del Fuego, is the longest continuous mountain range in the world. There are 60 Chilean peaks surpassing the highest point in the United States (Mt. Whitney—14,495 feet), and 19 peaks of more than 20,000 feet. These rank the Andes second in height only to the Himalayas, which have a number of peaks above 26,000 feet.

Chile extends for 2,600 miles in a narrow strip between the jagged Andes and the Pacific Ocean. With no broad agricultural plain like that of Argentina, it urgently needs trade links with the rest of the continent for distribution of its timber and minerals—nitrates, borates, copper, iron, and coal. Argentina, Chile's large and wealthy neighbor, offers a market that would be conveniently close if the mountains did not raise a giant barrier between.

To cross the mountain wall, in 1860 William Wheelwright of Massachusetts proposed a line over the 15,500-foot San Francisco Pass, 400 miles north of Uspallata Pass. Since then a dozen trans-Andean rail routes have been planned. Several were started but the present one was the only direct line completed.

Disastrous Washouts in 1934

Work started on this line in 1888, following a mule pack trail. Service did not begin until May, 1910. Cog line was necessary for several miles of steep approach on each side of the tunnel, which was bored through two miles of rock. A highway and telephone cable cross the ridge on the surface, passing the Christ of the Andes.

Sponsored by the governments of the two countries, the railway operated

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trolled stream of invisible electrons flowing through a vacuum, jumping a small distance from a hot wire filament to a metal plate. The controlling device at its simplest is merely a bit of wire mesh between filament and plate. This was the magic factor added by De Forest.

Here, in a gadget of glass and wire called a tube, is the fountainhead of the age of electronics. This little contraption, when set as a sentry to guard man's machines and even his life, in certain ways has better "judgment" and skill, and always more rapid reactions, than its maker. The automatic airplane pilot with its electronic "brain" has made flying safer, once the plane is in the air. Other electronic devices, already under development, after the war will probably take charge of the most dangerous parts of flying, the take-off and landing. One new instrument, a cousin of Radar, is sure to be on every plane: an electronic altimeter that tells a pilot at any second exactly how far his plane is above the surface of the earth, and saves him from crashing into mountainsides.

Note: For additional information on the part electronics plays in communications, see "Winged Words—New Weapons of War" (Radio), in the *National Geographic Magazine* for November, 1942; "The Miracle of Talking by Telephone," October, 1937*; and "New Safeguards for Ships in Fog and Storm," August, 1936*.

Bulletin No. 3, April 3, 1944.

THE WORK OF SILENT INVISIBLE ELECTRONS CAN BE BOTH SEEN AND HEARD

Electrons let the little man who wasn't there—and isn't here either—tell you all about it. A stream of invisible electrons brings this New York City radio reporter a clear picture of a prize fight by television (on the glass panel, upper left), and other electronic devices enable his voice in Spanish to describe the fight to sports fans on another continent by short-wave radio. The distinctive vacuum tube in which electrons operate for television is the cathode tube, in which a stream of quick-whisking electrons bombards a fluorescent glass surface with black dots to create a picture. In the familiar tubes of the radio receiving set, electron bombardments create sound.

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Japanese Empire Centered on Map for Geographic

AMERICAN forces now surround Japan on all four sides, but at a distance. Yanks in the Marshall Islands on the southeast, New Guinea on the south, the Aleutians on the northeast, and China on the west are at the far corners of a vast Pacific territory—so vast that few maps show it in any detail.

The National Geographic Society is publishing a map of this extensive battleground which shows the entire Japanese empire surrounded by United Nations-held fringes. The map—"Japan and Adjacent Regions of Asia and the Pacific Ocean"—is being issued as a supplement to the April *National Geographic Magazine*. It gives a ten-color close-up of the Empire of Japan as it was recognized before the war, as well as the Mandated Islands, the Philippines, much of Occupied China and Free China, all Manchuria, the far eastern territories of the U.S.S.R.'s Siberian reaches, with the Kamchatka Peninsula, and the western end of the Aleutians.

Inches Times 126 Will Be Distance in Miles

The map is published just as American forces are reaching its outer limits. Eniwetok, newly captured atoll in the Marshalls, barely got into the picture in the southeast corner. An inset shows the entire Marshall group. Truk and Ponape in the Carolines; Guam, Tinian, and Saipan in the Marianas—all these, the targets for American air and sea raiders, are found in southern reaches of the map.

On this map all roads—air, sea, and land—lead to Tokyo. The map is geographically centered on Tokyo (illustration, next page). The precise center is the Tokyo railway station. Bomber course to Tokyo from any point follows a straight line. (This is made possible by use of the Azimuthal Equidistant Projection, a style especially helpful to military planners.) The distance between any point and Tokyo can be measured by placing a ruler on the map and multiplying the number of inches by 126. The map scale is 126 miles to the inch.

The map was compiled by the Society's cartographic staff from entirely new base material. It was welcomed by the Geographical Section of the U. S. Army General Staff, the Far Eastern Division of the Commerce Department, and other government offices which opened their files to National Geographic researchers.

Japan proper—the four large homeland islands—is relatively small. Honshu, the largest—called the "mainland"—is just the size of Great Britain, or a little larger than Idaho. Hokkaido to the north, the second largest, equals Indiana in area. Kyushu would make about half of South Carolina, while Shikoku is the size of New Jersey. All together, even with their 1,075 adjacent islands, they are not as large by 10,000 square miles as California.

Surpassed Only by U. S. in Million-Size Cities

Featured on the map are five large-scale insets of Japan's strategic and industrial areas at home. One covers the Tokyo-Yokohama-Yokosuka Navy Base region; another the Nagoya manufacturing center; a third the tri-city sector of Osaka, Kyoto, and Kobe; the fourth the Shimonoseki link where Honshu and Kyushu Islands are joined by railroad tunnel at the western end of the Inland Sea, Japan's Mediterranean; and the fifth the naval centers of Nagasaki and Sasebo.

Five of these cities—Tokyo, Osaka, Nagoya, Kyoto, and Kobe—have more

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continuously from 1910 to 1934 except in heavy winter snows. Three trips a week in each direction was the summer schedule, one trip a week in winter. In 1927 a part of the line on the Chilean side was electrified.

In January, 1934, heavy summer storms and floods destroyed a 100-mile stretch in the Mendoza River valley on the Argentine side between Mendoza and Punta de Vacas. Bus service was substituted over this section, with trucks for freight.

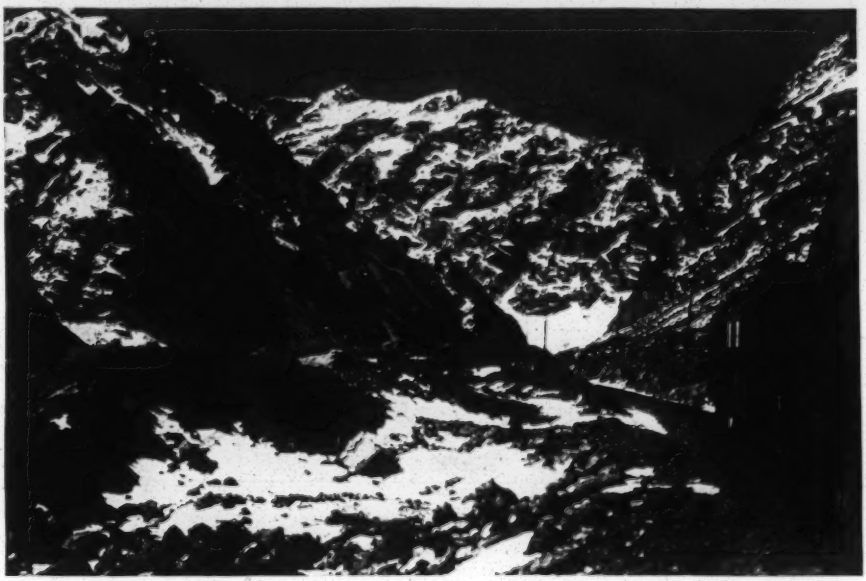
Rail distance between Valparaiso and Buenos Aires is 888 miles, and the trip normally requires 34 hours. Business men often choose the quicker air lines instead. The railroad has never been important for freight because of high rates necessitated by transfers where the rail gauge changes. Truck freight has been speeded since 1939 by the opening of a narrow highway beside the tracks in the railway tunnel.

Roundabout railway links between the two countries are even slower. A line running northeastward from Antofagasta on Chile's northern coast reaches Argentina indirectly through the high mountains by way of Uyuni, Bolivia. One other railroad link is still under construction. First planned in 1898, it will join Antofagasta with Salta, crossing the Andes 600 miles north of Uspallata Pass.

Note: Railways and highways in Chile and Argentina, and passes in the mountains between the two countries are shown on the Society's Map of South America.

See also, "Chile's Land of Fire and Water," in the *National Geographic Magazine* for July, 1941*; "Life on the Argentine Pampa," October, 1933; and "Flying the 'Hump' of the Andes," May, 1931*; and these GEOGRAPHIC SCHOOL BULLETINS: "Argentina, Meat and Grain Land, Yields Metals Too," March 27, 1944; and "Recent Coal Discoveries Add to Chile's Mineral Wealth," March 20, 1944.

Bulletin No. 4, April 3, 1944.



Albert W. Stevens

SLIDING ANDES AVALANCHES MENACE MOUNTAIN-CLIMBING TRAIN

A snow limit that varies from year to year, sudden avalanches, blinding cloud banks, piercing cold, and floods were hazards against which the builders of the Transandean Railway struggled for years; these remain to plague maintenance crews. The train pushes its way through tunnels and over bridges between sharp snow-steeped peaks of the world's longest mountain range. Near the summit of Uspallata Pass the line climbs the Paramillo de los Horcones, the moraine of an ancient glacier on the slopes of Aconcagua, the hemisphere's highest mountain. From the high peaks, glaciers trail their slow way to the valleys, some of them on the western slopes in Chile reaching the ocean.

than one million inhabitants each. The United States is the only other country in the world that has five cities of one-million-plus population. Tokyo, at the war's beginning, had more than seven million inhabitants, about 500,000 less than New York, making it the third-largest city in the world. In the days of Napoleon and Thomas Jefferson, Tokyo, then called Yedo and hardly known to the European world, was the largest city on the globe.

Meanings of Oriental Place Names

The map reveals two Chinese efforts, widely separated in time, to avoid foreign conquest: the Great Wall of China, built in the 3rd century B.C. against attack from Central Asia, and the 1938 diversion of the Hwang Ho (Yellow River) to stop the Japanese advance. The Chinese diverted the river near Kaifeng so that the new mouth is 250 miles south of the old outlet.

A table of geographic equivalents helps the student interpret Oriental place names. For example, *retto* means "chain of islands," *wan* mean "bay," *yama* means "mountain," *hu* means "lake." *Jima, ostrov, shima, sho, tao, to* all mean "island."

Note: "Japan and the Pacific," by former Ambassador to Japan, Joseph C. Grew, appears in the April, 1944, issue of the *National Geographic Magazine*. For further information, see "Japan Faces Russia in Manchuria," in the November, 1942, issue; "Unknown Japan," August, 1942; "Hidden Key to the Pacific" (Japan's Mandated Islands), June, 1942*; and "Women's Work in Japan," January, 1938*; and "Japan's Condemned Empire Was 50 Years in the Making," in the GEOGRAPHIC SCHOOL BULLETINS, January 3, 1944.

Bulletin No. 5, April 3, 1944.

Mary A. Nourse

DOWNTOWN TOKYO, MAP CENTER, HAS ITS QUOTA OF TYPISTS

The exact center of the new National Geographic Society's map of Japan is the downtown section of Tokyo, crowded with business men, railroad workers, government officials, and Japan's version of the white-collar typist. In days of prewar business methods, typewriter companies gave free lessons to would-be typists to promote sales. These members of a free typing class were photographed in a rest period.